

REMARKS

Reconsideration and allowance of the subject application are respectfully requested. Claims 1-16 remain pending, claims 1, 8, 11, and 16 being independent. In this Reply, Applicants have amended independent claims 1 and 11 and dependent claims 6 and 15. Applicants have also made minor amendments to the specification.

**Prior Art Rejection**

Claims 1-16 stand rejected under 35 U.S.C. § 102 as allegedly being anticipated by *Sato et al.* (U.S. Patent 5,570,575). Claims 1-16 further stand rejected under 35 U.S.C. § 102 as allegedly being anticipated by *Andou et al.* (U.S. Patent 5,884,477). These rejections, insofar as they may pertain to the presently-pending claims, are respectfully traversed.

Independent Claims 1 and 11

Independent claim 1 is directed to a catalyst deterioration suppressing apparatus that suppresses deterioration of an exhaust purifying catalyst which purifies toxic substances and exhaust gas emitted from an engine. The apparatus of claim 1 comprises: a catalyst temperature estimating element that estimates a temperature of the catalyst based on a catalyst temperature status, the catalyst temperature status indicating whether the catalyst temperature is increasing or decreasing; a fuel supply stopping element that stops supply of fuel to the engine during

deceleration; a fuel supply stop prohibiting element operable when the catalyst temperature estimating element determines that the temperature of the catalyst lies in a high temperature range equal to or greater than a predetermined temperature, for prohibiting the fuel supply stopping element from stopping the supply of fuel; an air-fuel ratio control element that feedback-controls an air-fuel ratio such that the air-fuel ratio is equal to a target air-fuel ratio set based on an operative state of the engine; and a feedback control prohibiting element operable when the fuel supply stop prohibiting element prohibits the supply of fuel from being stopped, for prohibiting the air-fuel ratio control element from providing feedback control.

Independent claim 11 is directed to a catalyst deterioration suppressing method that suppresses deterioration of an exhaust purifying catalyst which purifies toxic substances in exhaust gas emitted from an engine. The method of claim 11 comprises: stopping supply of fuel to the engine during deceleration; estimating a temperature of the catalyst based on a catalyst temperature status, the catalyst temperature status indicating whether the catalyst temperature is increasing or decreasing; prohibiting supply of fuel from being stopped when the temperature of the catalyst lies in a high temperature range equal to or greater than a predetermined temperature; and prohibiting feedback control of an air-fuel ratio when the supply of fuel is prohibited from being stopped.

Thus, as emphasized by the amendments presented herein, the catalyst deterioration suppressing apparatus and method recited in claims 1 and 11, respectively, estimate catalyst temperature based on a catalyst temperature status, which indicates whether the catalyst temperature is increasing or decreasing. As described for example in paragraphs [0071]-[0072] of the specification, Applicants have found that the responsiveness for the catalyst temperature changes depending on whether the temperature of the catalyst is increasing or decreasing. In a disclosed embodiment, the catalyst temperature exhibits high responsiveness when the temperature is increasing and low responsiveness when the temperature of the catalyst is decreasing, which is considered for more accurate catalyst temperature estimation (see e.g., paragraph [0074]).

Applicants respectfully submit that neither Sato nor Andou disclose a catalyst temperature estimating element or method step, as claimed, that estimates the catalyst temperature based on a catalyst temperature status indicating whether the catalyst temperature is increasing or decreasing.

According to MPEP § 2131, "a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051 (Fed. Cir. 1987). "The identical

invention must be shown in as complete detail as is contained in the ... claims." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913 (Fed. Cir. 1989).

At least based on the above, Applicants respectfully submit that neither *Sato* nor *Andou* anticipate independent claims 1 or 11, or any claim depending therefrom.

Independent Claims 8 and 16

Independent claim 8 is directed to a catalyst deterioration suppressing apparatus that suppresses deterioration of an exhaust purifying catalyst that purifies toxic substances in exhaust from an engine. The apparatus of claim 8 comprises: a catalyst temperature estimating element that one of detects and estimates a temperature of the catalyst; a fuel supply stopping element that stops supply of fuel to the engine during deceleration; a fuel supply stop prohibiting element operable when the catalyst temperature estimating element determines that the temperature of the catalyst lies in a high temperature range equal to or greater than a predetermined temperature, for prohibiting the fuel supply stopping element from stopping the supply of fuel; an intake air quantity adjusting element for adjusting a quantity of intake air supplied to the engine; and a correcting element operable when the supply of fuel is prohibited by the fuel supply stop prohibiting element, for correcting an amount of control for the intake air

quantity adjusting element such that the quantity of the intake air supplied to the engine is reduced.

Independent claim 16 is directed to a catalyst deterioration suppressing method for suppressing deterioration of an exhaust purifying catalyst that purifies toxic substances in exhaust from an engine. The method of claim 16 comprises: stopping supply of fuel to the engine during deceleration; one of detecting and estimating a temperature of the catalyst; prohibiting the fuel supply stopping element from stopping the supply of fuel when the catalyst temperature estimating element determines that the temperature of the catalyst lies in a high temperature range equal to or greater than a predetermined temperature; and reducing a quantity of intake air supplied to the engine when the supply of fuel is prohibited.

Although *Sato* discloses an arrangement which selectively performs "fuel cut control" to interrupt fuel delivery to an engine during engine deceleration, and which inhibits "fuel cut control" when the catalyst temperature exceeds a predetermined value (see e.g., Abstract), Applicants respectfully submit that *Sato* fails to teach or suggest the correcting element/method step of independent claims 8 and 16, which, when the supply of fuel is prohibited by a fuel supply stop prohibiting element, corrects an amount of control for intake air quantity such that the quantity of the intake air supply to the engine is reduced. Furthermore, although the sections

of *Andou* cited by the Examiner in reference to this feature (col. 5, lines 32-67; col. 6, lines 1-18) refer to air-fuel ratio control based on various engine operating parameters, Applicants respectfully submit that *Andou* fails to teach the correcting element/reducing step of independent claims 8 and 16.

At least in view of the above, Applicants respectfully submit that neither *Sato* nor *Andou* anticipate claims 8 or 16, or any claim depending therefrom.

In view of the above, Applicants respectfully request reconsideration and withdrawal of the Examiner's rejections under 35 U.S.C. § 102.

Conclusion

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact the undersigned at the telephone number below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

Applicants respectfully petition for a one (1) month extension of time pursuant to 37 C.F.R. §§ 1.17 and 1.136(a). A check in the amount of \$110.00 in payment of the extension of time fee is attached.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees

required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

  
By \_\_\_\_\_  
D. Richard Anderson, #40,439

P.O. Box 747  
Falls Church, VA 22040-0747  
(703) 205-8000

DRA/jdm  
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